Intimate Partner Homicide In Michigan 1999–2003

Michigan Department of Community Health
MDCH
Jennifer M. Granholm, Governor
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EXECUTIVE SUMMARY

How many individuals in Michigan die each week in the context of intimate partner violence? An editorial published in *The Detroit News* during December 2000 reported that approximately **every eight days**, a homicide related to intimate partner violence occurs in Michigan. Less than two months later, the newspaper quoted a homicide figure that equates to one partner violence-related fatality about **every three to four days**. So, did the incidence of intimate partner homicide in Michigan suddenly double? Not likely—and the true answer regarding the extent of this form of violence is being sought by individuals at the Michigan Department of Community Health.

This report presents findings from the Michigan Intimate Partner Homicide Surveillance System (MIPHSS) on the extent and characteristics of violent deaths related to intimate partner relationships, 1999–2003.

Intimate partner homicide, the willful killing of a current or former partner by another, actually occurred about **every six days** in Michigan between 1999 and 2003. This revelation, determined by linking information from multiple data sources, is a result of the most comprehensive tracking effort ever conducted for intimate partner homicide in the state. Four data sources—death certificates, newspaper articles, law enforcement reports, and medical examiners' records—were electronically linked in order to identify and tally these types of killings.

During the five-year period 1999–2003, the authors identified 300 occurrences of intimate partner homicide in the state. Despite an almost equal split in the state between male and female residents, female intimate partner homicide victims outnumbered males by more than a five-to-one ratio.

An additional 220 people were identified as having died in violent incidents related to intimate partnerships. For example, 111 of the 220 deaths were suicide cases—at least 64 of which involved an intimate partner homicide suspect taking his own life after killing his current or former partner. All 64 of the identified homicide-suicide decedents were men.

Although intimate partner homicide occurred approximately once every week from 1999–2003, this frequency of occurrence is probably conservative. This limitation is due in part to the researchers not having access to information from all possible contributors. For example, medical examiner data were obtained through the Michigan Medical Examiner Database—a voluntary case management system not yet used by all of the state's medical examiners. Additionally, the victim-suspect relationship was not identified in over half of the murders reported by law enforcement.

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How many individuals in Michigan die each week in the context of intimate partner violence? An editorial published in *The Detroit News* during December 2000 reported that approximately **every eight days**, a homicide related to intimate partner violence occurs in Michigan.[1] Less than two months later, the newspaper quoted a homicide figure that equates to one partner violence-related fatality about **every three to four days**.[2]

So, did the incidence of intimate partner homicide in Michigan suddenly double? Not likely—and the true answer regarding the extent of this form of violence is being sought by individuals at the Michigan Department of Community Health.

BACKGROUND

Although it has been disputed as to which gender is more likely to be victimized by an intimate partner[3,4,5], women in the United States (U.S.) are inarguably more apt to suffer greater physical consequences than men as a result of such violence. For example, females report experiencing physical injury at the hands of an intimate partner almost four times more often than males.[4] Furthermore, women in the U.S. also experience a disproportionate amount of fatal intimate partner violence (hereafter referred to as *intimate partner homicide*).

According to the Federal Bureau of Investigation (FBI), from 1999–2000 there were at least 3,331 intimate partner homicides in the United States.[*] Almost three-fourths (74%) of the victims were female.[6] In recent years, the female-to-male ratio has increased from approximately two-to-one to almost three-to-one; and although there has been a steady decline in the incidence of intimate partner homicide where the victim is male, the decrease among female victims has been less precipitous.[6,7,8,9] In addition to the differences noted between males and females, dissimilar intimate partner homicide rates reported by victims' race likely point toward other factors that are also involved (e.g., cultural, social, and economic issues).[8,10,11]

One of the complexities in studying intimate partner homicide (IPH) is the lack of standard definitions and methodologies for identifying cases. The combination of the pervasiveness of this violence and the lack of customary measurement techniques creates a need to systematically and consistently characterize the issue using *surveillance systems*.

The U.S. Centers for Disease Control and Prevention (CDC) defines public health surveillance as: "...the ongoing, systematic collection, analysis, interpretation, and dissemination of data regarding a health-related event for use in public health action to reduce morbidity and mortality and to improve health."[12] The Injury and Violence Prevention Section within the Michigan Department of Community Health has a

[*] This reported number of intimate homicides is likely an undercount, as the FBI's data source does not provide a means for identifying all relevant victim-suspect relationships (e.g., where the individuals were former boyfriend or girlfriend).

cooperative agreement with the CDC to implement an ongoing surveillance system of violence against intimate partners. This type of system is needed because there is no *single* data source in Michigan that currently can provide comprehensive information on this major health issue.

The Michigan Intimate Partner Violence Surveillance System (MIPVSS) has two components: one that examines non-fatal cases and another that tracks intimate partner homicide and partnership-related deaths. Data for the non-fatal cases are obtained from (a) an emergency department-based reporting system and (b) a prosecuting attorney-based reporting system. The policies and procedures for this non-fatal data system have been described elsewhere.[13] The present document pertains to the mortality surveillance system, hereafter referred to as the Michigan Intimate Partner Homicide Surveillance System (MIPHSS).

PURPOSE

The MIPHSS is designed to be an ongoing source of information on fatal intimate partner and partnership-related violence in Michigan. This system will allow for (a) characterization of victims and suspects; (b) identification of high-risk groups and communities; (c) monitoring trends and (d) evaluation of violence prevention policies and interventions.

There are several goals for the MIPHSS:

- The system will provide statewide coverage on an ongoing basis;
- The data contained within the system will be limited to items found in extant databases—i.e., data sources will neither be asked to collect additional information nor will new data sources be created;
- Reported data items, which describe victims, suspects, and events, will be accurate; and
- The system will be highly sensitive—i.e., it will identify a large proportion of the cases of interest.

POPULATIONS

The primary population of interest for the MIPHSS is all homicide victims in the state of Michigan, regardless of state or country of residence, where the victim was age 13 years or older at the time of death, and the victim and suspects were current or former intimate partners. MIPHSS staff are also examining deaths *associated* with intimate partner relationships (explained more fully under the section entitled “Case Classification”).

While most cases will involve Michigan residents, some victims will be residents of other states or nations. It was further suggested by the CDC that restrictions not be placed on state of occurrence because a small number of Michigan residents may be dying out-of-

state and should be included in the calculation of rates. Michigan residents dying out-of-state are tallied as best as possible via newspaper articles (explained more fully under the section entitled "Data Sources").

DEFINITIONS

Intimate partners

Current spouses

- Including long-time residents of the same household who have an intimate relationship (analogous to common-law spouses)*
- Separated spouses that are still legally married

Current non-marital partners (heterosexual or same-sex)

- Boyfriends/girlfriends
- Individuals with at least one child-in-common
- Dating partners (*dating* relationship means "frequent, intimate associations primarily characterized by the expectation of affectionate involvement"[14]), including first dates

Former marital partners

- Divorced spouses
- Former long-time residents of the same household who had an intimate relationship together

Former non-marital partners (heterosexual or same-sex)

- Former boyfriends/girlfriends
- Former dating partners

Homicide

The murder or intentional killing of one human being by another

Intimate partners may be cohabiting (i.e., living together) but need not be. The relationship also need not involve sexual activities. In addition, if the victim and suspect have at least one child-in-common but no current relationship, they are still considered to have been intimate partners. Lastly, sexual intercourse between persons too closely related to legally marry (i.e., incest) does not qualify them to be included as intimate partners for the purposes of this surveillance system—neither does the relationship between a sex worker and customer.

* Although this class of intimate partners may seem vague and/or antiquated (and is no longer recognized in Michigan law), some law enforcement officers still use the term 'common-law spouse' when reporting an intimate partner relationship.

DATA SOURCES

Multiple data sources are used to collect information for the MIPHSS. These sources include: the Michigan State Police homicide dataset, the Michigan Medical Examiner Database, death certificates, and newspaper articles. A fifth data source, the Adult Case Tracking System—an electronic case-management database operated by the Prosecuting Attorneys Association of Michigan—was pilot tested as a data source during the first year of the MIPHSS (1999). The authors decided against continued use of this source because it contains inadequate information on victims.

CRIMINAL JUSTICE DATA

Law Enforcement

The Michigan Department of State Police oversees two main systems for the reporting of homicide data. *Supplementary Homicide Reports* (SHR) are part of the nationwide Uniform Crime Reporting (UCR) Program.[15] The UCR Program collects crime data based on the voluntary submission of information by law enforcement agencies at the city, county, and state levels. *Michigan Incident Crime Reports* (MICR) provide similar data, but with more detailed information than the older UCR Program.[16] Law enforcement agencies not reporting homicide data through either SHR or MICR utilize other means of reporting. Between 1999 and 2003, 97% of Michigan law enforcement agencies either submitted data through one of the systems above or via other means.[17,18,19,20]

MIPHSS staff receive the aggregated homicide database from the State Police. Although homicide coverage is intended to be statewide, incomplete case ascertainment can occur if an agency fails to submit data—which does not happen very often with homicide (Criminal Justice Information Center, personal communication, 2003).

Homicide offenses can be classified as one of three types: *murder and non-negligent manslaughter*, *negligent manslaughter*, and *justifiable homicide*. The MIPHSS only considers murders and non-negligent manslaughters.

The legal classification of a case may change for several reasons, including charges being dropped, new charges being added, or as the result of a "not guilty" verdict at trial. However, keeping track of the final criminal judgment through years of appeals may not be practical. Therefore, MIPHSS staff uses the determination regarding case type at the time records are accessed.

MEDICAL DATA

Medical Examiners

The Michigan Medical Examiner Database (MMEDB) is a voluntary, Internet-based data collection system that allows ME offices to electronically manage case information via a centralized database. The MMEDB has several goals: (a) to give ME offices throughout Michigan the ability to automate their records; (b) to establish a minimum standard for ME data collection in Michigan; and (c) to create a dataset that can be utilized by researchers and policymakers. Michigan law requires MEs to investigate the cause(s) and manner of death in instances of sudden, unexpected, accidental, violent, or suspicious death.[21]

As of April 2005, 51 of 83 county MEs (61%) participated in the MMEDB. In order to access data that contain personal identifiers, MIPHSS staff had to obtain written consent from each office that participates in the database. Various methods (e.g., several rounds of mailings, follow-up phone calls) were used to try and gain permission. To date, 46 fully participating MMEDB counties have granted access to their data for the MIPHSS.

For case finding, the MMEDB contains a data item indicating whether the *manner of death* was natural, accidental, suicide, homicide, undetermined, or pending. Homicide cases were set apart in order to search for possible intimate partner killings, based on information pertaining to others involved with the incident. Useful information can be found in the case narrative regarding victim-suspect relationship (e.g., "ex-wife was murdered by husband").

Death Certificates

Death certificates are part of Michigan's statewide vital statistics system. The Vital Records and Health Data Development Section within MDCH is the custodian of such records for individuals expiring within state boundaries and also for Michigan residents dying out-of-state. An authorized representative (e.g., funeral director, attending physician, etc.) records the cause(s) and manner of death on the death certificate. In cases of violent deaths, manner of death is determined and documented by a medical examiner or coroner (depending on state and jurisdiction where death occurred).

The World Health Organization publishes rules and guidelines for coding mortality data, based on information provided by the certifier of death. These guidelines, now in their tenth revision, are published in the International Statistical Classification of Diseases and Related Health Problems (ICD-10).[22] When information regarding only one cause of death is recorded, this is the *underlying cause of death.* If more than one cause is recorded, *related causes of death* are also assigned.

The CDC compiled a list of ICD-10 codes that the MIPHSS staff used in searching the 1999 death certificate database in order to isolate cases that might involve intimate partner homicide. Since that first pilot test, MIPHSS staff have revised the list of codes used in the database search (**Appendix**).

MEDIA DATA

Newspapers

Violent death information gleaned from newspapers comes from two sources. First, a MIPHSS staff member continually searches Michigan newspapers' online sites for fatalities possibly involving intimate partner violence. A variety of keyword searches are used (e.g., "murder"). Weekly headlines are also examined for relevant cases. Staff perform regular keyword searches using "suicide" to locate *IPR deaths*, as well (explained more fully under the section entitled "Case Classification").

The second source of newspaper stories is the Michigan Domestic Violence Prevention and Treatment Board. The Board employs a clipping service to search Michigan newspapers for domestic violence homicides each year.

It is unclear what proportion of Michigan newspapers had online sites available for searching when 1999–2003 MIPHSSS data were collected. As of April 2005, though, at least 85 daily and weekly newspapers in Michigan had online sites available.[23] Furthermore, it is unclear what the circulation area was for newspapers covered by the aforementioned clipping service. Regardless, the combination of both data collection methods is intended to capture a large proportion of the intimate homicides and partnership-related deaths that are reported in Michigan newspapers.

In order to determine whether or not a fatality was related to an intimate partner relationship, staff examined the narrative of retrieved newspaper pieces. Questionable cases were resolved through internal discussions and/or consultation with the MIPVSS advisory group. Included cases were then abstracted by entering salient data items into a Microsoft Access database. All entries were manually verified by comparing information in the database with that reported in the original stories.

CASE CLASSIFICATION

Records from the four primary data sources—law enforcement reports, medical examiner records, death certificates, and newspapers—are linked to identify cases. An individual decedent is a case; and cases are assigned to unique categories—intimate partner homicide (IPH) or intimate partnership related (IPR) death—based on the nature of the violence and the relationship between the victim and suspect.

A *suspect* in a case is the individual reported as such.[*] That is, a person is classified on the basis of primary data sources indicating that the individual was (or is) a primary person thought to have been involved in/committed or arrested for the homicide. An arrest and/or conviction are not required for an individual to be classified as a suspect.

[*] Even though more than one individual can be reported as a suspect, our interest resides with suspected, current or former intimate partners.

Auxiliary data sources—e.g., the Offender Tracking Information System[*]—assist in determining if someone should be classified as a *perpetrator*. For example, the IPH and IPR categories may include cases where the suspect was (a) convicted of a charge less than homicide (e.g., through plea-bargaining) or (b) acquitted and no other suspect was identified. Whereas those in the former would be considered perpetrators, individuals in the latter would remain classified as suspects. Collectively the two groups are referred to as *suspects*.

Intimate Partner Homicide (IPH)

- The cause of death (underlying or related) on a death certificate is coded as Y07.0—"Other maltreatment syndromes by spouse or partner[†];" and/or
- A newspaper, criminal justice, or medical examiner source indicates that a suspect in the murder or intentional killing of another was that decedent's current or former intimate partner; and/or
- A newspaper, criminal justice source, or medical examiner report indicates that one partner hired or caused someone else to kill the other partner[‡]—"homicide by proxy."

Intimate Partnership Related (IPR) Death

- A newspaper, criminal justice source, or medical examiner report indicates that a homicide victim and his/her killer or alleged killer—who also might be the suspect in an IPH—both had ties to an intimate partner of the suspect (e.g., an ex-husband kills his former wife and her current boyfriend) or were somehow connected to an incident involving the suspect's intimate partner.
- A newspaper or medical examiner report indicates that the suspect in an IPH committed suicide within three months of the crime—hereafter referred to as "homicide-suicide."
- A newspaper or medical examiner report indicates that an individual committed suicide in connection with circumstances surrounding an intimate partner relationship in which that person was involved.

RECORD LINKAGE

Homicide records subset from law enforcement, medical examiner, and newspaper databases are deterministically linked with those selected from the death certificate database.[24] Theoretically, all Michigan residents, as well as non-residents expiring within Michigan, that die by means of homicide should have a death certificate on file with the

[*] http://www.michigan.gov/corrections/1,1607,7-119-1409---,00.html

[†] While other ICD-10 codes are allowed, the relationship of the victim to suspect will be unknown in those cases unless it can be ascertained from one of the other primary data sources.

[‡] For the purposes of this surveillance system, the intimate partner is considered the primary suspect in such cases. If the third party (non-partner) is killed by others or self as part of the IPH incident, this individual is counted as an IPR decedent.

Vital Records and Health Data Development Section of MDCH. Therefore, to the extent possible, this source is used to populate the dataset.

Various computer algorithms are used to match records (Table 1). Programs used for automated record linkage were written in SAS 9.1 (SAS Inc., Cary, NC).

Table 1. Identifying victim information available to link IPH cases

Identifier	*Death Certificates*	*News*	*ME*	*Police*
Name	+	+	+	-
Gender	+	+	+	+
Age	+	+	+	+
Date of death	+	+	+	+
Date of birth	+	-	+	-
County*	+	+	+	+
Race	+	-	+	+

RESULTS: INTIMATE PARTNER HOMICIDE

Spatiotemporal characteristics

A total of 306 intimate partner homicides were identified that a) occurred in Michigan (n = 300) and/or b) involved a victim who was a Michigan resident (n = 290). Unless noted otherwise, the IPH data analyses that follow pertain only to the 300 deaths that occurred in the state.

During 1999, approximately 9 IPHs occurred per 1,000,000 residents (95% C.I. 6.9–11.0).† The observed incidence declined to about 7 IPHs per million residents (C.I. 5.5–9.3) during year 2000 and 6 per million residents (C.I. 4.6–8.0) in 2001.

Although the decline observed during the first three years was not statistically significant, the downward trend seemed to level off after 2001—7 IPHs per million (C.I. 5.4–9.1) in 2002 and 6 per million (C.I. 4.7–8.1) in 2003 (Figure 1).

* In medical records, this variable refers to the county of death as established by the certifier of death; but this variable refers to county of incidence in law enforcement data (usually one and the same).

† Rates were calculated by dividing the number of intimate partner homicides by the mid-year population estimate ($\geq$ 13 yrs old) and multiplying by 1,000,000. Age adjustment was utilized to account for differences in crude rates between years that may have been due to differing age distributions.

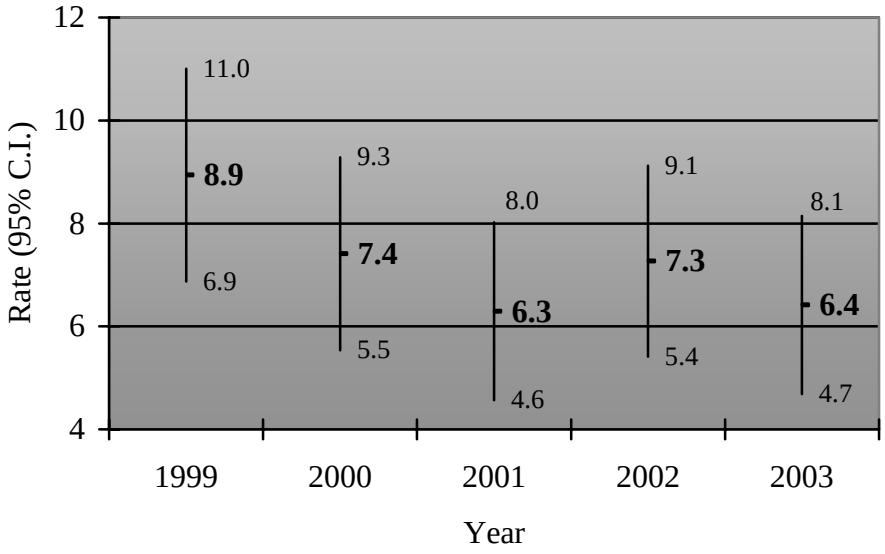


Figure 1. Age-adjusted rates of intimate partner homicide (per million residents): Michigan, 1999–2003

Because the results in the first MIPHSS report[24] were based on only one year of data, it was impossible to declare whether the occurrence of IPH in a particular month was above or below expected (based on past figures). But with multiple years of data, it is now possible to note (for example) that the percentage of IPHs identified in July 2002 and 2003 were lower than expected based on 1999–2001 data (Figure 2).

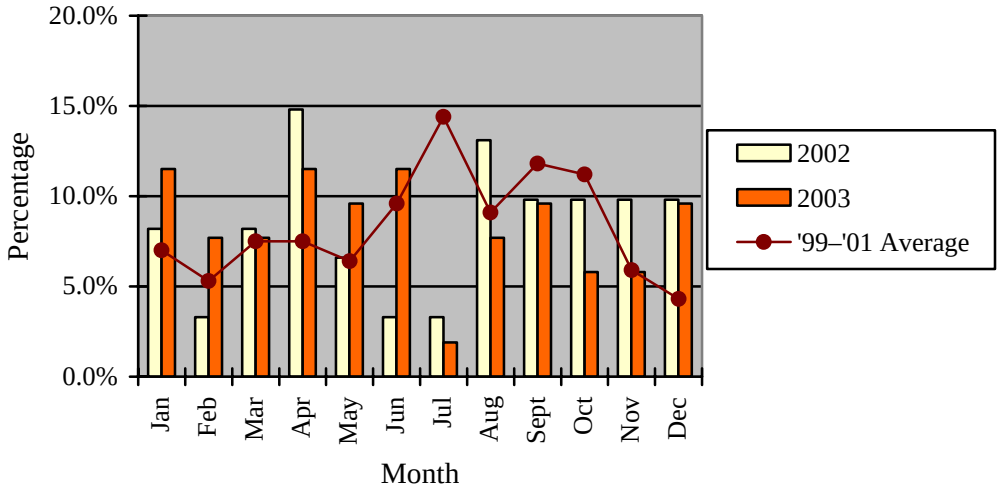


Figure 2. Percentage distribution of intimate partner homicide by month of occurrence—Michigan, 1999–2003

Figure 3 indicates which of Michigan's 83 counties experienced one or more intimate partner homicides between 1999 and 2003. The more populous counties carried the greatest burden of death related to intimate partner violence. Twenty-five percent of identified cases took place in Wayne County, which houses the City of Detroit.

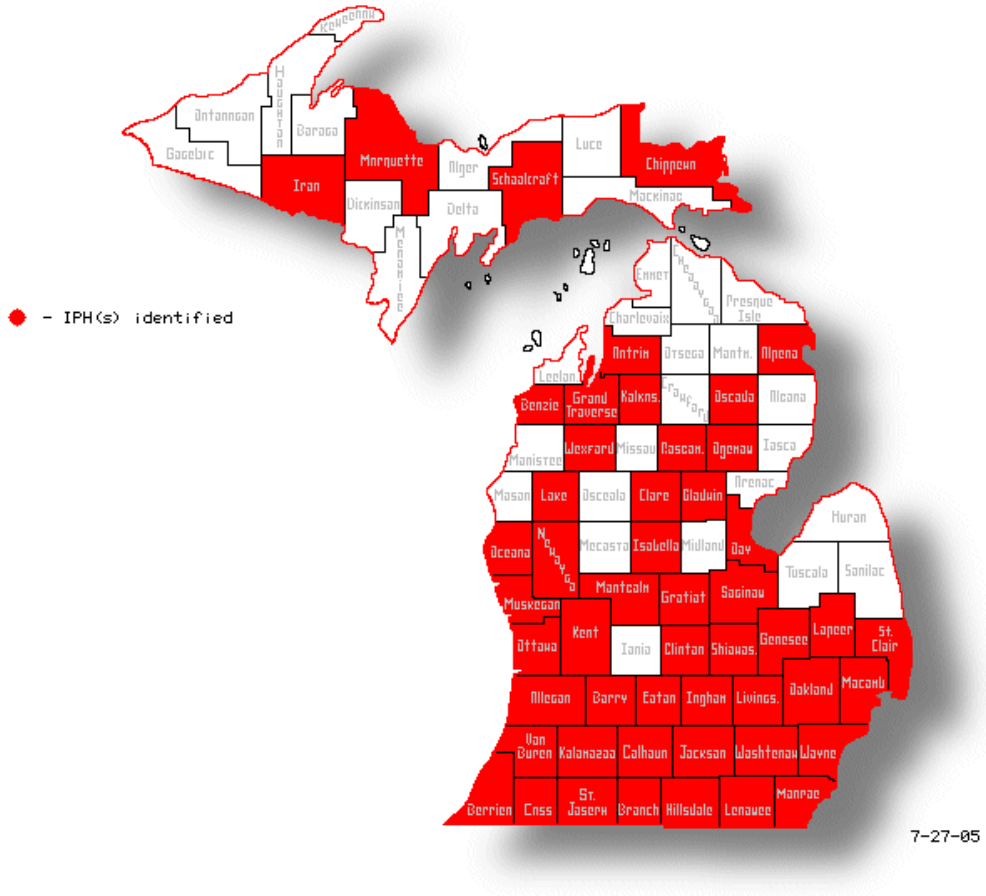


Figure 3. Michigan counties that experienced at least one IPH, 1999–2003

From 1999–2003, no substantial differences were noted either between genders or across years in terms of *place of injury* and *place of death* for identified IPHs. With regard to the location of injurious events, approximately three-fourths took place in the victim's home (Table 2). This is not surprising given the nature of the relationships involved (i.e., intimate partners). Also not surprising, then, is the finding that most of the deaths (60%) resulting from said events occurred in homes.

Table 2. Cross-tabulation of IPH places of injury and death—Michigan, 1999–2003

Place of injury (%)	*Place of death (%)*				
	Home	*Hospital*	*Ambulance*	*Other; unknown*	*Total*
Home	169 (94.4)	43 (67.2)	4 (66.7)	6 (11.8)	222 (74.0)
Street and highway	—	9 (14.1)	1 (16.7)	5 (9.8)	15 (5.0)
Trade/service area	1 (0.6)	1 (1.6)	—	7 (13.7)	9 (3.0)
Other specified	7 (3.9)	7 (10.9)	1 (16.7)	15 (29.4)	30 (10.0)
Unspecified	2 (1.1)	4 (6.3)	—	18 (35.3)	24 (8.0)
Total*	179 (100)	64 (100)	6 (100)	51 (100)	300 (100)

Victim demographics

Women of reproductive age were victims of IPH more often than other groups of women (Table 3). The relatively small number of male victims precludes meaningful age comparisons. It can be stated, though, that the average age of male IPH victims (Mean=41 years [95% C.I.=37–44]) was not significantly different from that of female victims (Mean=37 years [95% C.I.=35–39]).

Almost two thirds of the identified victims, regardless of gender, were younger than age 40 at the time of death. Intimate partner homicide robbed Michigan residents of 8,292 years of potential life (YPLL)† before age 65 from 1999–2003. When the standard age used to calculate YPLL is extended to age 70, intimate partner homicide was responsible for 9,716 years of potential life lost. Assuming each fatally injured resident would have lived to age 75 pushes the YPLL figure beyond eleven thousand years (11,173).

* Percentage totals may not equal exactly 100.0 due to rounding error.

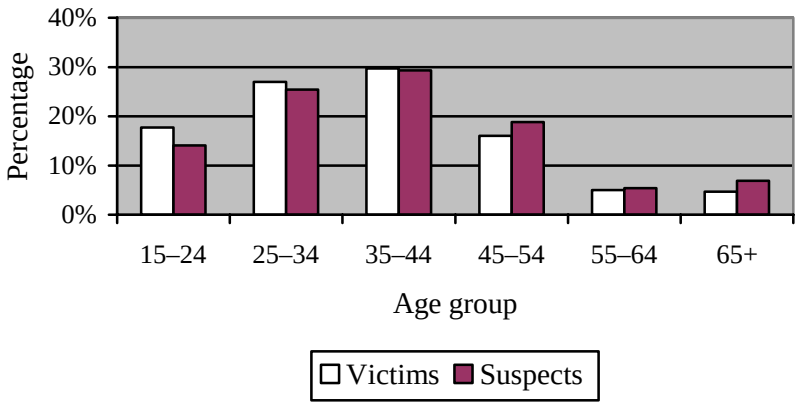
† YPLL was calculated by subtracting the age at death from the standard year (age 65) and then summing the individual differences. Note YPLL calculation does not include people who died at the standard age or older. For instance, choosing 65 as the standard age excludes people who died at age 65 or older.

Table 3. Distribution of IPHs by victim's age and sex—Michigan, 1999–2003

Victim's age	*Males*		*Females*		*Total*[*]		*Cumulative percent*
	#	*%*	*#*	*%*	*#*	*%*	
15–19			16	*6.4*	**16**	***5.3***	5.3
20–24	5	*10.2*	32	*12.8*	**37**	***12.3***	17.6
25–29	7	*14.3*	28	*11.2*	**35**	***11.7***	29.3
30–34	7	*14.3*	39	*15.5*	**46**	***15.3***	44.6
35–39	5	*10.2*	44	*17.5*	**49**	***16.3***	60.9
40–44	7	*14.3*	33	*13.2*	**40**	***13.3***	74.2
45–49	7	*14.3*	25	*10.0*	**32**	***10.7***	84.9
50–54	4	*8.2*	12	*4.8*	**16**	***5.3***	90.2
55–59	4	*8.2*	7	*2.8*	**11**	***3.7***	93.9
60–64			4	*1.6*	**4**	***1.3***	95.2
65–69	3	*6.1*			**3**	***1.0***	96.2
70–74			8	*3.2*	**8**	***2.7***	98.9
75+			3	*1.9*	**3**	***1.0***	100.0
Total	49	*100.0*	251	*100.0*	**300**	***100.0***	

By and large, the age distribution for IPH victims and suspects was about the same (Figure 4)—victims were an average of 37 years of age (+/- 1.5 yrs.[†]) and suspects were 39 (+/- 1.6 yrs.). The matched age difference between victim and suspect in the same incident ranged from the victim being younger by 49 years to the victim being older by 47 years.

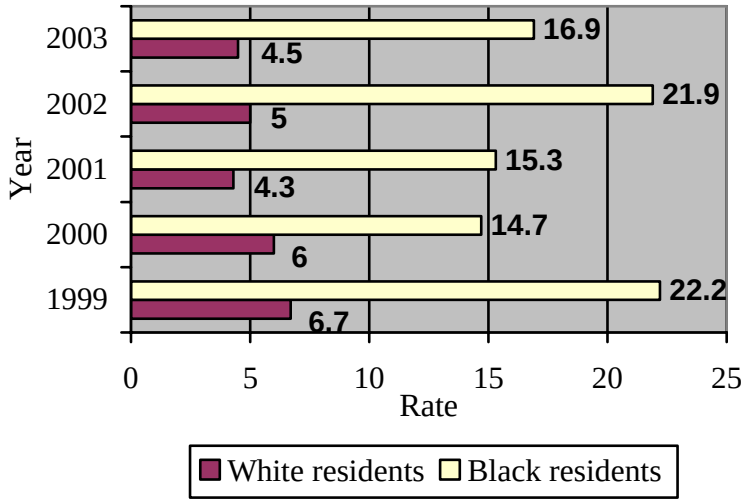
Figure 4. Age distribution of IPH victims and suspects: Michigan, 1999–2003



[*] Percentage totals may not equal exactly 100.0 due to rounding error.
[†] Margin of error.

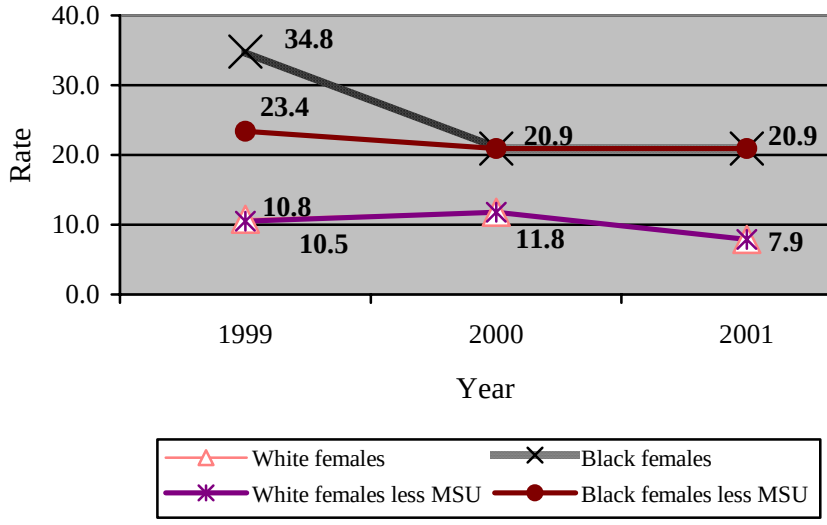
Intimate partner homicide rates did vary by race (Figure 5). The IPH rate for black residents was greater than that of white residents each year under observation. Most of this differential risk is represented among females (Figure 6), where the IPH rate reached a high of 35 per 1,000,000 (95% C.I. 19.8–49.8) among black female residents in 1999.*

Figure 5. IPH rates by victim's race: Michigan, 1999–2003



The stark contrast between 1999 and subsequent years appears to be a reflection of data sources used for case finding. An academic researcher conducted a study of all female murder victims from 1999–2001 in Detroit, Michigan. Victims were initially identified through medical examiner records. Additional information was then gathered from the City of Detroit Police Department.

Figure 6. Female IPH rates by victim's race—Michigan, 1999–2001



* Rates based on 11 or fewer deaths are considered unstable. Hence, male IPH rates are not presented by year of occurrence.

The MSU researcher provided case summaries to MIPHSS staff for all 1999 femicides in Detroit involving domestic violence. Any incidents not already contained within the MIPHSS dataset were added (provided they met the project's selection criteria); duplicate cases were cross-referenced. MIPHSS staff did not have access to this additional data source for any year other than 1999 (Figure 6).

Victim-suspect relationship

The proportion of identified IPH victims killed by a current legal spouse (42%) and a current boyfriend/girlfriend (39%) were about the same (Tables 4 & 5). The proportion of identified IPHs committed by same-sex partners was too small to meaningfully comment on.

Among white victims, a greater proportion were killed by a current spouse than by a boyfriend or girlfriend. Conversely, the proportion of black victims killed by a current spouse was smaller compared to those killed by a boyfriend/girlfriend.

Table 4. Distribution of male IPHs by victim's race and relationship to suspect—Michigan, 1999–2003

Victim-suspect relationship	*Victim's race*			
	White	*Black*	*Other/Unknown*	*Total*[*]
Male victims				
Husband	9 (42.9%)	5 (19.2%)	1 (50.0%)[†]	**15 (30.6%)**
Boyfriend	8 (38.1%)	16 (61.5%)	1 (50.0%)	**25 (51.0%)**
Common-law	1 (4.8%)	1 (3.9%)		**2 (4.1%)**
Ex-husband	1 (4.8%)	1 (3.9%)		**2 (4.1%)**
Ex-boyfriend	1 (4.8%)			**1 (2.0%)**
Same-sex partner	1 (4.8%)	3 (11.5%)		**4 (8.2%)**
Total	**21 (100.0%)**	**26 (100.0%)**	**2 (100.0%)**	**49 (100.0%)**

[*] Percentage totals may not equal exactly 100.0 due to rounding error.
[†] Victim's race recorded as "Other Asian".

Table 5. Distribution of female IPHs by victim's race and relationship to suspect—Michigan, 1999–2003

Victim-suspect relationship	*Victim's race*			
	White	*Black*	*Other/Unknown*	*Total*[*]
Female victims				
Wife	77 (48.4%)	28 (33.7%)	6 (66.7%)[†]	**111 (44.2%)**
Girlfriend	58 (36.5%)	32 (38.6%)	2 (22.2%)[‡]	**92 (36.7%)**
Ex-wife	9 (5.7%)	3 (3.6%)		**12 (4.8%)**
Ex-girlfriend	9 (5.7%)	14 (16.9%)	1 (11.1%)	**24 (9.6%)**
Common-law	6 (3.8%)	3 (3.6%)		**9 (3.6%)**
Same-sex partner		3 (3.6%)		**3 (1.2%)**
Total	**159 (100.0%)**	**83 (100.0%)**	**9 (100.0%)**	**251 (100.0%)**

Causes of death

By grouping together related, underlying causes of death (ICD-10 codes from death certificates), it can be seen that during 1999–2003 the majority of identified IPH victims died because of assault by firearms, followed by attack with sharp objects (Figure 7).

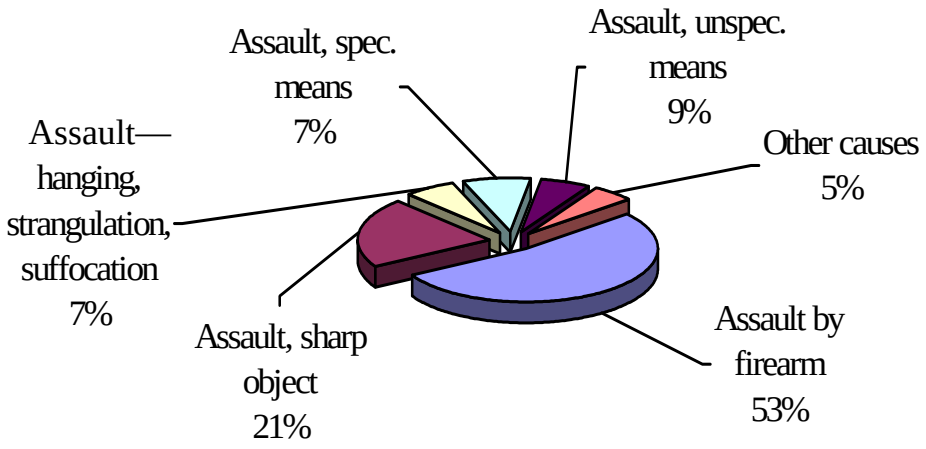


Figure 7. Major groupings of underlying causes of death for IPH victims—Michigan, 1999–2003

[*] Percentage totals may not equal exactly 100.0 due to rounding error.
[†] Two victims were recorded as "Other Asian", two were recorded as "American Indian", and race was unknown for another two victims.
[‡] One victim was recorded as "American Indian", and race was unknown for another victim.

Mechanisms of death

Firearms were the major weapon type used in identified IPHs of both sexes from 1999–2003, followed by knives/cutting instruments (Tables 6 & 7). Proportionally, knives were used more often to kill males than females, whereas blunt objects, blows delivered by the hands or feet, and strangulation or asphyxiation were used more often to murder females.

Table 6. Distribution of weapon types used in male intimate partner homicides, by victim's relationship to suspect—Michigan, 1999–2003

	Relationship to suspect			
Weapon type	Spouse*	Boyfriend†	Same sex	Total
Male victims				
Firearm	11 (57.9%)	9 (34.6%)		**20 (40.8%)**
Knife	6 (31.6%)	14 (53.8%)	3 (75.0%)	**23 (46.9%)**
Other-unknown	2 (10.5%)	3 (11.5%)	1 (25.0%)	**6 (12.2%)**
Total	**19 (100.0%)**	**26 (100.0%)**	**4 (100.0%)**	**49**

Table 7. Distribution of weapon types used in female intimate partner homicides, by victim's relationship to suspect—Michigan, 1999–2003

	Relationship to suspect			
Weapon type	Spouse	Girlfriend	Same sex	Total
Female victims				
Firearm	76 (57.6%)	60 (51.7%)	1 (33.3%)	**137 (54.6%)**
Knife	18 (13.6%)	22 (19.0%)	2 (66.7%)	**42 (16.7%)**
Blunt object	5 (3.8%)	3 (2.6%)		**8 (3.2%)**
Hands/feet	15 (11.4%)	9 (7.8%)		**24 (9.6%)**
Strangulation-hanging, drown, asphyxiation	8 (6.1%)	12 (10.3%)		**20 (8.0%)**
Other weapon‡	5 (3.8%)	6 (5.2%)		**11 (4.3%)**
Other-unknown	5 (3.8%)	4 (3.4%)		**9 (3.6%)**
Total	**132 (100.0%)**	**116 (100.0%)**	**3 (100.0%)**	**251**

* Includes the following relationship types: current spouses, ex-spouses, and common-law spouses.
† Includes current and former dating partners.
‡ Includes death by poison, explosives, fire, and narcotics/drugs.

RESULTS: INTIMATE PARTNERSHIP RELATED DEATH

In addition to the 300 in-state intimate partner homicide victims identified during 1999–2003, the MIPHSS registered 220 deaths occurring within Michigan connected to intimate partner relationships (IPR deaths). This total does not include any of the actual homicide victims that were killed by a current or former intimate partner. The vast majority of IPR deaths identified in Michigan involved a male decedent (Figure 8).

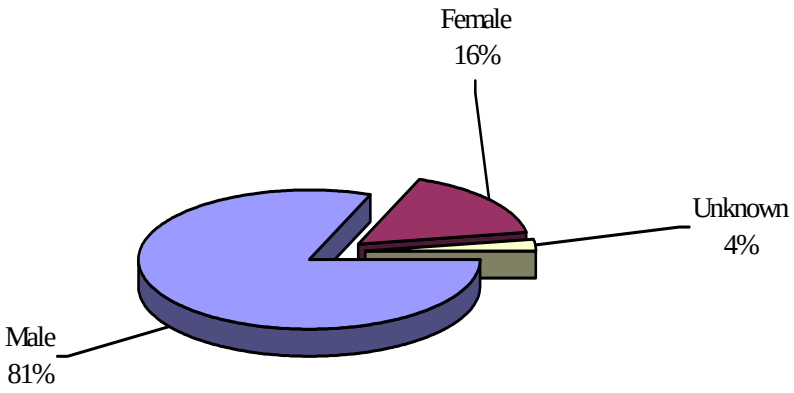


Figure 8. Distribution of IPR deaths by victims' sex—Michigan, 1999–2003

Men comprised virtually all (98%) of the IPR decedents that committed suicide (Figure 9). At least 58% of identified, IPR-related suicide deaths occurred after an IPH suspect killed their current or former intimate partner. All 64 homicide-suicide decedents were men.

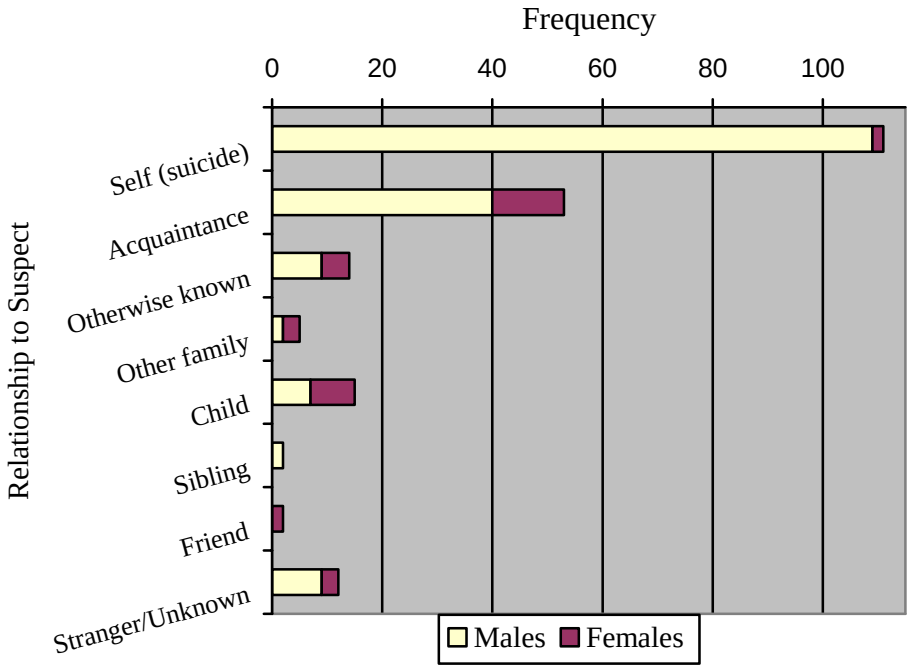


Figure 9. Distribution of identified IPR deaths by victim's sex and relationship to suspect—Michigan, 1999–2003

DISCUSSION

Intimate partner homicide (IPH) comprised an important proportion of all homicide in Michigan from 1999–2003. According to information from police reports, there were 3,056 murder victims* in Michigan during that period.[,17,18,19,20] Based on findings from the Michigan Intimate Partner Homicide Surveillance System (MIPHSS), intimate partner homicide victims comprised approximately 10% of that total. This figure is close to other published findings that relied on multiple years of data (11–12%).[,,,25,]

Among female murder victims in Michigan, known intimate partner homicides accounted for approximately 1 in 3 fatalities. This figure also coincides with what has been reported elsewhere for proportions of murdered adult women killed by an intimate partner.[,,,] Previous analyses have also shown that females are more likely to be fatally victimized by an intimate than are males.[,,,26,] Data from the MIPHSS for 1999–2003 indicate that identified female IPH victims outnumbered males by a five-to-one ratio (84% vs. 16%). Other researchers—employing a variety of data sources similar to the MIPHSS—have

* The definition of murder used by police is the willful killing of one human being by another. The reported figure pertains to victims age 17 years and older.

also recently reported that 80–87 percent of intimate partner homicide victims are female.[,] These results differ markedly, however, from studies that utilized limited data sources. In these studies for example, during 1981 in the United States, both the IPH rate among males and the proportion of IPH victims that were male were barely less than the corresponding figures for females[6,8]; by 1998 both these numbers for males had declined to less than half that reported for females[6,8], but still not to the levels indicated by the MIPHSS. When data on IPH are aggregated from past decades, it can appear as though the proportion of intimate partner homicides perpetrated against women does not exceed two-thirds of all cases.[6,8,9]

It has also been demonstrated in the literature that black populations have higher IPH rates than whites.[,,,27,] Among identified IPH victims in Michigan from 1999–2003, blacks had IPH rates that were two- and three-times the rate of whites. This is similar to what others have discovered for female victims.[,,28] As mentioned in the introduction, dissimilar rates that have been reported by victims' race for domestic and intimate partner homicide potentially point toward other factors that are involved (e.g., cultural variation and socioeconomic issues).[,,,] For example, within abusive relationships Campbell et al[29] reported no independent association between race/ethnicity and risk of intimate partner femicide after controlling for other demographic factors (e.g., age, education, job status).

As evidenced by the age distribution of female IPH victims identified from 1999–2003 in Michigan, the risk for victimization spans adolescence through older adulthood. The greatest frequencies of occurrence, however, belonged to women aged 20 to 44 years old (i.e., reproductive age women). Other analyses have indicated that the peak risk for IPH among females usually occurs in their thirties and declines sharply thereafter.[,] For male victims, the highest risk for IPH is shifted to later in the life cycle—about 10 years after the peak period for females of the same race.[,] Also, male victims tend to be slightly older than their perpetrators, while the opposite usually holds true for female victims.

Any discussion of variations in IPH occurrence by victims' sex and age must be accompanied by a conversation about victim-suspect relationship, since these variables tend to be associated with one another—e.g., younger, female IPH victims are more likely to be murdered by boyfriends than husbands.[,] Among Michigan's identified IPH victims of each gender, the type of relationship involved in killings was split almost evenly between marital and non-marital partners. It has been suggested that when men kill their female intimate partner, it often represents the most serious outcome of a history of abuse.[,,,30,31] Similarly, intimate partner homicides where women kill men often reflect self-defense or payback for ongoing abuse.[,,] The enduring nature of the latter predisposes them to involve older parties more likely to be married. Unfortunately, the surveillance data reported here do not allow for determining the history of those involved.

In addition to differences noted above, the weapon type used in fatal episodes of intimate partner violence also differs by victim's sex. From 1999–2003 in Michigan, male IPH victims were more likely to die by way of cutting instruments, and female victims were more likely to die by way of firearms. In Michigan and the rest of the nation, firearms have been documented as the most frequently used weapon type in IPHs.[,,,32,] Paulozzi et

al contrasted the percentage of IPH victims in the U.S. killed with particular weapon types to the percentage of all homicide victims and their means of death. The authors concluded that male IPH victims were more likely to die by means of cutting instruments than all murdered males; female IPH victims were more likely to die by way of firearms than all female homicide victims.[7]

When the MIPHSS was designed, the authors recognized the importance of capturing information on all deaths related to intimate partner relationships. To do otherwise would severely downplay the magnitude of the problem. Thus, the term *intimate partnership related (IPR) death* was coined (refer to page 13 for a case definition). More than two hundred (220) such cases were captured by the MIPHSS for 1999–2003. The predominance of men in this category—representing more than three-fourths of cases—is largely due to their exclusive contribution to the category termed *homicide-suicide*.

Numerous studies have been published that examined homicide-suicide in general[33,34,35,36,37,38,39,40,41,42] and suicide following intimate partner homicide specifically.[43,44,45] Analyses that focused broadly on homicide-suicide have repeatedly discovered that spousal/consortial (i.e., involving intimates) are the most frequent type—accounting for approximately 50–85 percent of incidents.[9,10,11,12,13,14,15,16,17] Within intimate partner homicides, it has been documented that approximately 25–40 percent of perpetrators commit suicide subsequent to the homicide[10,11]; and practically all of these perpetrators are male. The current analysis indicates that at least one of every five (21%) IPH suspects in Michigan took their own lives after killing their current or former partner. All of the identified homicide-suicide suspects during 1999–2003 were male.

Limitations

Calendar year 1999 was the first year for which the Michigan Department of Community Health (MDCH) conducted surveillance for intimate partner homicide and partnership related deaths. While MDCH staff have worked since then to improve the ability of the MIPHSS to identify and characterize cases, limitations related to data sources that contribute information are not under the authors' control. These limitations will be discussed within the context of each contributing source.

First, the Vital Records and Health Data Development Section within MDCH provides death certificate data for the MIPHSS. Access to this information is not problematic for the MIPHSS staff since they, too, are housed within MDCH. However, death certificates for all cases that should go into the calculation of IPH rates do not always make it to the state. Michigan residents that expire outside the state are supposed to have their death certificate information forwarded to MDCH by other states' vital records offices. This does not always occur. In addition, there are rare instances where the decedent's body cannot be located—thus no death certificate.

After obtaining the actual death certificate, the most important feature of this data source for the MIPHSS pertains to the victim's cause of death. While prior studies have demonstrated outstanding agreement between death certificates and external review

panels for broad homicide categories, fourth digit ICD-10 codes are rarely used.[46] Assignment of specific causes of death would allow death certificates to serve as an independent source for IPH case ascertainment. One such cause of death code, Y07.0—*maltreatment syndromes by spouse or partner*—was not assigned to a single 1999–2003 IPH case. However, the certifier of death must provide the requisite information, which falls primarily to medical examiners in Michigan.

The Michigan Medical Examiner Database (MMEDB) provides information to the MIPHSS for medical examiner data. The main limitation of this source for the MIPHSS is that, as a voluntary system, less than two-thirds of Michigan's medical examiners are currently using the MMEDB. Because the agency that manages this system is continually recruiting more participants, the utility of the MMEDB for the current surveillance initiative should only improve. Fortunately most participating ME offices (90%) have agreed to share their data with MDCH for surveillance. However, until more medical examiners are (a) using the MMEDB, (b) sharing their data with the MIPHSS, and (c) entering complete incident information, case ascertainment with this source will be limited. Also, many important variables pertaining to incidents will remain unusable (e.g., toxicology results for victims).

Law enforcement data were one of the two *primary* sources (newspapers being the other) by which cases are ascertained for the MIPHSS. The homicide database provided by the Michigan Department of State Police is comprised of two main report types: Supplementary Homicide Reports (SHR) and Michigan Incident Crime Reports (MICR). Although the National Incident Based Reporting System (NIBRS)—of which MICR is a part—is designed to enhance reporting of crime information by law enforcement agencies, the NIBRS system does not compensate for the shortcomings of the SHR with respect to IPH surveillance. Much has been written about the limitations of the SHR system with respect to IPH[47], including: the underreporting of IPH cases due to missing information within reported cases, exclusion of ex-boyfriends or ex-girlfriends as victim-suspect relationship types, and an inability to parse out intimate partner-related deaths.

SHR data, however, have been shown to be fairly accurate in terms of the total number of homicides reported.[48,49] Therefore, it is probable that most IPHs and IPR (homicide) deaths in Michigan are contained in the Michigan State Police dataset. But missing information *within* this data regarding the victim-suspect relationship makes case ascertainment problematic for the MIPHSS. Perhaps the main reason for this information being reported as 'unknown' pertains to timeliness—SHR forms are typically submitted shortly after a homicide has been investigated, often before the details of a case become known. It has been suggested that cases reported with unknown victim-suspect relationships are likely to involve people unfamiliar with each other.[50] On the other hand, Langford et al discovered that 60% of partner victim cases originally coded as non-intimate relationships in the SHR were incorrectly labeled due to misclassification of relationships other than 'unknown' (e.g., 'acquaintances' and 'otherwise known'). The authors suggested that the lack of exhaustive options for victim-suspect relationship types (i.e., ex-boyfriends and ex-girlfriends) might contribute to this misclassification bias.

However, the MIPHSS uses multiple data sources for case ascertainment and verification, which likely reduces the number of cases that are missed.

In regards to newspapers as a data source, not all cases of homicide, including IPH, are singled out for reporting by journalists. For example, of the 187 identified IPHs in Michigan from 1999–2001, just three-fourths (75%) of the murders were reported in the newspapers at least once. It is certainly possible that most of the remaining quarter received press, and a MIPHSS staff member simply did not retrieve these articles. However, this seems less likely after comparing characteristics of cases identified and not identified via newspapers. Whereas 11% of the victims reported in Michigan newspapers were men, 26% of the victims without press were male. Other salient differences include victim's race (22% black when case reported on; 68% when no news) and city of death (9% occurred in Detroit per the news; 55% sans news). Factors are often present that make particular victims' homicides more newsworthy than would be expected (based on the frequency of homicides in their respective groups), including a female victim and white victims.[51,52]

CONCLUSION

There is no national surveillance system for intimate partner homicides—or intimate partnership related deaths—in the United States. This fact might change someday with the advent of the National Violent Death Reporting System (NVDRS). Currently, the NVDRS is being implemented in 17 states.[53] This national reporting system is designed to capture all violent deaths, including those related to intimate partner relationships. For now, though, intimate partner homicide surveillance is the responsibility of individual states.

This report offers findings from the Michigan Intimate Partner Homicide Surveillance System—the most comprehensive tracking effort ever conducted for intimate partner homicide in Michigan. Until the first MIPHSS report[24], statements regarding the annual incidence of IPH in the state were questionable because of (a) non-rigorous methodological descriptions and/or (b) they were based on single data sources and grossly underestimated the magnitude of the problem. In regards to the former, the Michigan Department of Community Health offers the present report. In terms of the latter, the authors acknowledge that the results presented herein are also likely an undercount. However, it is the first time a concerted effort has been made to accurately identify, count, and characterize IPH and IPR deaths in the state.

Nationally it has been argued that IPH rates are decreasing steadily, regardless of whether one assesses trends from the mid-1970s or 1980s onward.[,,, ,54,55] Just as no causal explanations have been widely accepted regarding the decline in general, no established reasons exist for variable rates among specific gender and race combinations. It has been noted that *regional* socio-cultural differences might be a factor, making institutionalization of the MIPHSS as an ongoing information source—and development

of county-based domestic violence fatality review teams—important priorities for Michigan.

APPENDIX. Description of ICD-10 codes[*] searched on from death certificates.

ICD-10 Codes *(n)*	Description
Y07.0	Maltreatment syndromes by spouse or partner
T74.1	Maltreatment syndromes, physical abuse
T74.8	Other maltreatment syndromes
T74.9	Maltreatment syndrome, unspecified
X85 *(n=2)*	Assault by drugs, medicaments and biological substances
X86	Assault by corrosive substance
X87	Assault by pesticides
X88	Assault by gases and vapors
X89	Assault by other specified chemicals and noxious substances
X90	Assault by unspecified chemical or noxious substance
X91 *(n=18)*	Assault by hanging, strangulation and suffocation
X92 *(n=2)*	Assault by drowning and submersion
X93 *(n=3)*	Assault by handgun discharge
X94 *(n=21)*	Assault by rifle, shotgun and larger firearm discharge
X95 *(n=123)*	Assault by other and unspecified firearm discharge
X96	Assault by explosive material
X97 *(n=3)*	Assault by smoke, fire and flames
X98	Assault by steam, hot vapors and hot objects
X99 *(n=59)*	Assault by sharp object
Y00 *(n=6)*	Assault by blunt object
Y01 *(n=1)*	Assault by pushing from high place
Y02	Assault by pushing or placing victim before moving object
Y03 *(n=2)*	Assault by crashing of motor vehicle
Y04	Assault by bodily force
Y05	Sexual assault by bodily force
Y08 *(n=6)*	Assault by other unspecified means
Y09 *(n=17)*	Assault by unspecified means
Z63.0	Problems in relationship with spouse or partner
F10.2[†]	Mental/behavioral disorders, alcohol/dependence syndrome
F19.1[†]	Mental/behavioral disorders, drug use/other substance use
R99.0[†] *(n=3)*	Other ill-defined and unspecified causes of mortality
V48.9[†] *(n=1)*	Unspecified car occupant injured in non-collision transport

Several ICD-10 codes assigned to victims in the MIPHSS database were not included in the set of codes specified by MIPHSS staff when requesting death certificates, in particular: C80—*Malignant neoplasm*, J44.9—*Chronic obstructive pulmonary disease*, J98.8—*Other respiratory disorders*, V03.0—*Pedestrian injured in collision*, W80—*Other specified respiratory disorders*, X02—*Exposure to controlled fire in building or structure*, X44—*Accidental poisoning*, Y24—*Firearm discharge, undetermined intent*.

[*] Death certificates were searched for both underlying and related cause(s) of death for the listed codes.
[†] This code was added with years 2000 and 2001 case finding.

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